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St. Bartholomew's Hospital Journal,

SEPTEMBER 14th, 1896.

"Æquam memento rebus in arduis
Servare mentem."—*Horace,* Book ii, Ode iii.

IT is our custom, in the September number of each year, to address some remarks especially to those whom we expect to welcome as First Year men on the 1st of October. Though comparatively unimportant beings in the life of the Hospital at first, these freshmen are potentially of great importance. Many of them will ultimately hold positions of authority and guidance in the Hospital, and some may perhaps one day proudly write themselves members of the Staff. Hence it is of importance that they should be properly trained to support the ancient traditions of our Hospital and our Profession. We purposely place the traditions of the Hospital first, for what are the traditions of the Profession but the amplified traditions of our great hospitals? The battles of our Nation are won first, they say, in the playing-fields of Eton, and certainly honour and courtesy towards one's fellow practitioners is the result of earlier training in honour and courtesy towards one's fellow dressers and clerks.

First Year men are therefore attacked on every side with torrents of advice, and the keynote of the whole is "CULTIVATE THE POWER OF OBSERVATION." This may almost be called the text of the student's curriculum. Again and again are students told that the facts they learn are of small importance as compared with the training of their mental powers and the habits of observation they form. In support of this we need only cite Sir James Paget's address at the last Distribution of Prizes. So voluminous and continuous is the advice of this sort that the freshman receives, that there is little need for the JOURNAL to join forces, and it is our intention rather to confine ourselves to the physical side of student life.

Things are now very different from what they were a few years back. Organisation has been steadily at work, and there is now no excuse for those who say that the difficulties in the way of getting athletic exercise are so great as to prevent them from taking up any games. Our ground at Winchmore Hill, with its excellent dressing accommodation, can compare well with any other in the land, and is within comparatively easy access from the Hospital. Our boxing rooms are barely a hundred yards from the Hospital. The Amalgamated Clubs' entrance fee is small, and paid at the outset makes one permanently free of all the Clubs.

We cannot too strongly impress upon our freshmen the extreme importance of the double aim of their training—to make them *men* as well as medical men. If they confine themselves to their strictly professional work, and do not interest themselves in the every-day affairs of the world, they will find ultimately that the links that connect them with men outside their own profession are very few indeed. Conversation will become irksome when it leaves the familiar bounds of medicine, and that abomination, "shop talk," will be the almost inevitable result. When they leave the Hospital and go out into the world they will find them-

selves handicapped, and will see men of the world, though professionally, perhaps, much less able than themselves, succeeding far better. The "sportsman" is not likely to reach this unhappy condition His various matches bring him into contact with many men in other walks of life, and the opportunities for interchange of thought are many. It is surely hardly necessary for us to even refer to the other great advantages of an athletic life,—increased health and strength, and increased capacity for work. These must be obvious, to use the words of our great physiologist, "even to the casual observer."

We draw the attention of all freshmen to the official announcement of the Amalgamated Clubs in this number, in which they will learn how to introduce themselves into the Athletic life of the Hospital; but we would also mention the Volunteer Corps, to which many Bart.'s men belong. "The Artists" (the 20th Middlesex R.V.) are so well known that they can need no praise from us, and the Medical Staff Corps includes a "Bart.'s Half-Company," while one at least of their officers is a prominent Bart.'s man. Men who intend to become volunteers should join early in the October of their first year, so that they may complete their three years, at least, in the earlier and less fully occupied days of their studentship. Life in the "Artists" we speak of with experience, and the many friends one made in the corps, the "sing-songs" at headquarters and round the camp fire, the shooting and the various company competitions, constitute a retrospect which can never be looked upon without pleasure.

Our advice to the freshman is—GET AS MUCH ENJOYMENT OUT OF YOUR STUDENT DAYS AS POSSIBLE. Be a steady worker, but be everything else that you can besides. Aim to figure in the Hospital Prize Lists, but also in the Cup-teams of your Hospital and your Volunteer Company. And lastly, whatever your occupation, let it be ruled by the motto over the door of the Medical School, "WHATSOEVER THY HAND FINDETH TO DO, DO IT WITH THY MIGHT."

The forthcoming Election of Direct Representatives of the Profession to the General Medical Council.

THAT the constitution and procedure of the General Medical Council are recognised on all sides, and even by many members of the Council itself, to be gravely imperfect is well known, and for this reason the Election of Direct Representatives in November next assumes a very special importance. The English practitioners have for the past five years been represented by Dr. Glover, Mr. Wheelhouse, and Sir Walter Foster. Of these the last two have finally resigned their appointments; but Dr. Glover, whose labours in the cause of his fellow-practitioners have been most assiduous, offers himself for re-election; and inasmuch as the profession five years ago placed him at the head of the poll, there is no doubt that a similar honour again awaits him. Dr. Glover has chosen as his future colleagues from among the candidates who have come forward on the present occasion to contest the two seats vacated by Mr. Wheelhouse and Sir W. Foster, two general practitioners of the best traditions and professional standing, namely, Dr. S. Woodcock of Manchester, and Dr. Lovell Drage of Hatfield.

Dr. Woodcock especially replaces Mr. Wheelhouse as the nominee of the North, and being the President Elect of the Lancashire and Cheshire Branch of the British Medical Association, and unanimously (together with Drs. Glover and Drage) nominated thereby, he will doubtless find himself returned, and will have a wide field of legislative reform before him.

We are glad to see that in Dr. Lovell Drage an old Bart.'s student is a candidate.

Dr. Lovell Drage, after graduating at Oxford, was House Surgeon in 1884 to Mr. Tom Smith, and Midwifery Assistant to the late Dr. Matthews Duncan. Well known to his fellow-students and to his fellow-practitioners in Hertfordshire, as he is, we hope that Bart.'s men will cordially and actively support with their votes and influence both his candidature and also that of his colleagues Drs. Glover and Woodcock.

Clinical Lecture on Congenital Club-foot.

By ALFRED WILLETT, F.R.C.S.

I PROPOSE to-day, gentlemen, to take into consideration the treatment of that variety of congenital club-foot technically termed *Talipes equino-varus*.

I do not intend to discuss the causation of club-foot, interesting as the ætiology of this affection is, but to start at once upon perhaps the most important part of the subject, namely, its treatment. Hospital surgeons will, I am confident, agree with the statement that the results of treatment of hospital cases are usually very disappointing. It is most mortifying to the surgeon, and to the house-surgeon and dresser, who have treated the case, and most disappointing to friends, all of whom been have gratified by the early signs of improvement, to see after a time that the deformity has returned. In private practice, on the other

hand, treatment is usually quite successful. I desire to direct your attention to the chief causes of this difference in the results, since they emphasise the necessity of prolonged care and watching of patients—needless to add, almost invariably infants—after the deformity has been rectified.

Before attempting to rectify the deformity one must study its deviation from the normal foot. It is not a perfectly easy matter to point this out, but the following features can be fairly well demonstrated. These specimens from the Museum before you will help to make clear what I am about to say.* Firstly, one notices a drawing up of the heel. This drawing up of the heel (the *equinus* portion of the deformity) has the effect of forcing the astragalus forwards, so that only about its posterior half lies under cover of the tibia; then this posterior part, being wedged in between the tibia above and the os calcis below, becomes flattened. In the next place, one observes in the skeleton of the deformed foot that the bones of the foot collectively are adducted and rotated upwards and inwards, constituting the *varus* portion of the deformity. Certain consequential changes are to be observed: the fibula is relatively increased in length, so the external malleolus is relatively to the internal lower than normal. Other points are alterations in the shape of the astragalus; posteriorly it is flattened, owing to the neck being bent, and as a result the head is turned inwards, and, of course, the scaphoid and cuneiform bones become correspondingly altered in direction. These, then, form the second noticeable changes, and I regard them as most important. The third feature which we cannot help observing is the alteration in size between the bones on the outer size of the foot, *e. g.* the cuboid and fifth metatarsal, which are relatively much enlarged, whilst those on the inner are lessened. Taken as a whole, the club-foot has a curved shape, the concave surface being directed upwards; and as a further result we note that the bone which in the erect position of the body touches the ground is the cuboid instead of the os calcis, and of course, in older patients, has to receive the weight of the body. Hence arise the large bursal swellings found in patients who have stood and walked. There are, no doubt, many minor changes, *e. g.* atrophied muscles; but the broad facts are the twofold nature of the deformity—the drawing up of the heel and the adduction and the upward and inward rotation of the foot.

I have brought three cases of congenital club-foot to show you; two are infants under two years old, the first a boy of about eighteen months old, and the other quite an infant in arms. Both were sent to me from the Orthopædic Out-patient Department some three months ago. Treatment by division of all the tibial tendons in addition to the Achilles tendons, followed by extension, had been carried out, but without success, and I was asked by Mr. Walsham to undertake some operative measure for their cure. With regard to the treatment of club-foot, my view is that infants with club-foot ought to be cured by simple measures, and by the term simple I mean such as do not go beyond division of the tendo Achillis, or in some cases possibly the plantar fascia. I think the division of any of the tibial tendons unnecessary and inadvisable. My reason for adding the latter term is that usually the sheaths are opened in the tenotomy, and then this serious risk arises, viz. that in the process of repair the tendon will become adherent to the sheath, the muscle will have its fixed point above the ankle-joint, and therefore can no longer normally move the foot.

In the next place, to cure club-foot, or rather to place the foot in the position in which a cure may eventually result,—and this is a distinction which is of fundamental importance, the forgetting of which I take to be a prime cause of failure in hospital patients. With many surgeons I advise the separation of the procedure into two distinct stages, the first being directed towards overcoming adduction and rotation, *i. e.* the varus part; and secondly, after this has been accomplished, to take in hand the remaining equinus. A few words in explanation of the methods I adopt. It is most desirable and quite practicable to start the treatment of varus almost from birth. The mother or nurse should be instructed to hold one or other of the baby's feet, when both are deformed, in her hands, drawing each in turn outwards in the endeavour to bring the feet in line with the legs, aiming to reduce the deformity to one of equinus. Soon the foot may be bandaged between two light elastic splints, either steel or whalebone. At three months old, or if the baby is of this age when coming under treatment, plaster-of-Paris bandages have to be employed.

The feet of both of these little creatures, when admitted under me, were in the usual position of equino-varus. Feeling reluctant to perform any sort of tarsal operation upon such young subjects, I set to work *de novo* on the lines previously described. Holding each foot in full range of extension, I applied—after enveloping it in wool—first a domette bandage and then plaster-of-Paris bandages, the feet being held in the straightened position until the plaster had set. I had to repeat this process several times. Two months elapsed before the varus part of the deformity in these infants was overcome. I believe now that they will both, after about a month, be able to have an apparatus applied to keep their feet in position until they can wear boots; for, as you can see, the feet are in quite excellent position.

In the routine practice, the re-application of plaster-of-Paris cases should be done once a fortnight; and during the first stage, when treating the varus, should be continued until one can bring the foot quite easily into the position of simple equinus, showing that the varus has been overcome.

* Specimens exhibited.

This only implies that the fibrous structures have been stretched. Of course, no improvement in shape of the bones can have been brought about in the time, but the tendons and ligaments can be stretched, and the effect is that eventually the bones, being placed in their natural relation to each other, and also being no longer subjected to abnormal pressure, grow and develop almost if not quite perfectly. This part of the treatment may take six weeks to three months; you need not be in any way discouraged if progress seems very slow, but the younger the infant the more rapid the improvement. Pressure sores will be obviated by strictly and carefully adhering to the details of the routine.

Now we approach the treatment of the second stage. In this the tendo Achillis has to be divided, and perhaps also the plantar fascia, if found to be contracted. After the completion of the operation the foot should be forcibly flexed, keeping it all the time carefully everted; then plaster-of-Paris bandages are to be applied as previously described. There is a right and a wrong way in bandaging club-feet, and the right way is always to pass the bandage from the fibular side of the leg over the front and inner aspects, and then under the plantar and up over the outer, stretching the foot outwards at each turn. Although a small detail apparently, it is a matter of real importance, I can assure you, for if reversed the surgeon is favouring the deformity. This treatment has to be carried on until the entire deformity has been reduced. At the present day, after division of the tendo Achillis, we at once fully flex the foot. In about six weeks the plaster should be taken down, and perhaps reapplied once or twice. The foot is now *not cured*, but it is in a position for *a cure to be eventually attained*. A Tamplin's shoe, or Baker's modification of it, must be worn continuously, *i. e.* night and day, being taken off for washing, massage, and passive movements only, and being carefully reapplied immediately afterwards.

As soon as the child is old enough to walk, a boot with outside iron carried above the knee is to be worn during the day. Careful attention has to be given to the repair and renewal of the boot or iron. At somewhere about five years of age these stringent regulations can be relaxed a little, and at seven the child should be cured. It is owing to the omission in carrying out such stringent regulations as these that hospital patients do so badly, and whilst in the case of private patients they are diligently followed, and hence the recoveries are almost uniformly complete, I could quote numerous instances of individuals operated upon in infancy who are now grown up and remain quite cured. If only treatment be carried out methodically, the deformity rectified, and the foot kept in position for some years, the outcome is entirely satisfactory. What one meets with in hospital patients is commonly this: that as soon as boots and irons are supplied, and the patient leaves the hospital, the patient is lost sight of, perhaps for good, but at least for a year or two; for as boots and irons get out of repair, and of course the child in time outgrows them, they are left off and the child given ordinary boots in their place. At last, after an interval, say of two or three years, the mother brings back the child with the condition of club-foot completely returned. If one ventures to complain of the neglect, the answer is, "Oh! the boots came to pieces," or "He outgrew them and I could not afford to buy any more." If a young child is allowed to put aside boots and irons, it is only a matter of time for the deformity to be reproduced. This is the chief reason for the unsatisfactory results of the treatment in hospitals of infants with club-foot. When patients come back in this relapsed condition the term "inveterate club-foot" is applied, for at three or four years of age the bones have acquired permanent shape and serious operative measures have to be adopted, for I may say at once that it is a waste of time to go over the old stage again. Rarely does one get any benefit from re-division of the tendo Achillis.

Very many are the operative measures devised for the cure or amelioration of inveterate talipes equino-varus. I shall content myself with describing the one or two which I am in the habit of performing.

I. *Tarsectomy*.—This consists in cutting out a wedge-shaped piece of the tarsus, having the cuboid for the base and the scaphoid or neck of the astragalus for its apex. This is a large operation; it must and does interfere with the growth of the foot, and makes it ultimately very short. It has this defect, that it does not with any certainty effectually deal with the deformed astragalus.

II. The operation I advise is *Astragalectomy*. I have here one patient, a little boy, for whom this operation has been performed. His case is a good example of the manner in which little hospital patients with club-foot drift into the inveterate state. The tendo Achillis had been divided when the child was about nine months old, bearing out in this respect what I said just now, that treatment is often commenced much later than is desirable. As far as I can make out, the first step taken was the division of the tendo Achillis; the foot was then wrenched and put up in plaster. The patient was at this time under treatment in the Orthopædic Department, but a good result was not obtained, for the dresser's notes describe the affected foot on admission as follows:—"The right foot is inverted and the heel drawn up; the inner bones of the foot are atrophied, the outer ones hypertrophied; the head of the astragalus can be felt to be bent and turned inwards; a thickened bursa lies over the cuboid." Under these conditions I decided it was useless to attempt any further temporary measures, so I advised and performed astragalectomy on February 18th. The position obtained was satisfactory, and the foot was at once put up in plaster of Paris. I now

show his foot; it is plantigrade, and there is good flexion and extension between the os calcis and the tibia and fibula; this will be supplemented later on by increased range of movement in the transverse tarsal joint. On the 8th of March the plaster was removed for the first time; the wound was almost completely healed, it was re-dressed and the foot put in plaster again. On the 13th it had to be removed, as the gauze had induced eczema of the skin which lasted for some time; this accident certainly affected the position a little. Eventually he was placed in a boot and iron, which was fitted with a toe-elevating spring.

I will mention one instance illustrating the superiority of astragalectomy over tarsectomy. A boy, about seven years old, was brought in with inveterate club-foot. He had had tarsectomy performed on his right foot elsewhere; both feet were, however, still deformed, the right quite as severely as the left, for in both he walked upon the outside of his feet, so that the operation had completely failed to relieve him. I performed astragalectomy on the left foot, and it came into good position: then I operated similarly on the right. A year or more afterwards I showed the boy, and pointed out how the single operation of astragalectomy had been more successful than when it had taken place after tarsectomy, because in the latter case the foot was stunted and shortened by the first operation. I confess that in adults the removal of the astragalus may not be sufficient, owing to the curving of the feet, due to that condition of rotation with hypertrophy of the bones on the outer side of the foot, and of atrophy of those on the inner, which I have mentioned. In such cases I think tarsectomy, *i. e.* removing a wedge from the outer side of the foot, may be advisable, and personally I should limit the operation of tarsectomy to the rectification of any marked deformity remaining after astragalectomy.

The advantages I claim for astragalectomy over other operations for inveterate club-foot are these:—First, owing to the complete ease with which the foot can be placed in its normal position after the astragalus has been excised, an everted plantigrade position is secured. Secondly, that usually the os calcis occupies the space previously filled by the astragalus, lying under the tibia and between the malleoli, permitting serviceable movement at the new ankle-joint, although occasionally I have found it necessary to divide the fibula just above the external malleolus, in order to obtain a space wide enough between the malleoli to receive the upper surface of the os calcis. Lastly, the improvement effected is permanent; one has no fear of relapses after astragalectomy. Often as I have performed this operation, the after-result in no instance has ever made me regret having removed the astragalus, for although the foot is by no means perfect and in no way comparable to the well-nigh normal foot resulting from successful treatment in infancy, it is nevertheless serviceable, and allows ultimately an ordinary boot to be worn.

Pathological Jottings.

By A. A. KANTHACK, M.D., Lecturer on Pathology.

I.—ALBUMINURIA.

To understand the pathology of albuminuria we must go back to physiology and histology. Unfortunately, physiologists are not agreed whether urine is a filtrate from blood and lymph or a secretion. A true filtrate it cannot be, since it normally contains no albumen; so that, if not a secretion, it could only be the product of diffusion or dialysis. Let us assume that, as far as the watery constituents are concerned, we are dealing with a process of diffusion, this being the view to which many at the present time subscribe, although in the present discussion it is almost a matter of indifference what view we take. The chief filtering and dialysing apparatus are the Malpighian bodies, which consist of (*a*) a capillary tuft which is invaginated into (*b*) the cavity of the capsule, which is lined by a thin, delicate epithelium reflected also over the capillary tuft. This cavity is drained by the uriniferous tubule, which carries the contents of the capsule into the collecting tube, and the latter discharges it into a calyx. Thence it reaches the bladder along the pelvis and the ureter. It must be remembered that normally everywhere in the body fluid passes out or transudes from the capillaries through their endothelium into the surrounding tissue, and that lymph-formation depends mainly on this process. The fluid which passes through the capillary endothelium is, of course, albuminous.

In the kidneys we may have, theoretically at least, a double process: (*a*) one of filtration, fluid passing as lymph from the glomerular capillaries into the hypothetical space between them and the capsule, and (*b*) another of diffusion, this lymph dialysing through the capsular membrane, so that the fluid in its passage from the capillaries to the capsular space has to traverse two membranes—(*a*) the capillary endothelium, which is a filtering membrane, and (*b*) the glomerular or capsular epithelium, which acts as a dialysing membrane. Now, if, as we assume for the present, urine be a product both of filtration and diffusion, whatever fluid appears in the cavity of the capsule must have come from the glomerular capillaries. But since under normal conditions there is no albumen in the urine, it is evident that while the capillary endothelium is permeable to albumen the glomerular epithelium is impermeable to albumen, because if these two membranes were equal in their permeability, then the fluid in the capsular cavity would closely resemble in composition the fluid passing out from the capillaries, *i. e.* it would more or less resemble lymph and be albuminous. Hence, as Cohnheim asserted, it is the glomerular epithelium which prevents the albumen

from passing into the urine, *i. e.* it behaves as a perfect dialysing membrane.

However, we may assume—what as a matter of fact is believed by many—that the glomerular epithelium is so closely fitted over the capillary tuft that we have practically a single membrane interposed between the blood in the capillaries and the capsular space, this being a membrane which is impermeable to albumen, *i. e.* a membrane which may be compared to the artificial membranes used in physical and chemical experiments. And, therefore, in the production of urine we are not dealing with an ordinary filtration, but with a process of diffusion or dialysis, to which must be added, however, the specific activity of the renal epithelial cells, which are capable of removing and altering harmful or useless substances in the blood or lymph.

Passing now to the consideration of albuminuria, we know that albumen appears in the urine in conditions which clinically are extremely diverse. We have albuminuria with (*a*) acute and subacute inflammation of the kidney, (*b*) with so-called chronic parenchymatous changes, (*c*) venous engorgement, (*d*) anæmia or cachectic conditions, and (*e*) with febrile disturbances leading to cloudy swelling. At first sight it would seem that it required a different explanation in each case. The pathologist, studying a phenomenon common to a number of different lesions, must attempt to search for some factor common to all these lesions. The common factor is, I think, easily obtained in the present case. The acute inflammation, the venous engorgement, the anæmia, the cloudy swelling, and the "parenchymatous degeneration" all imply injury to the renal tissues, *i. e.* injury to the glomerular membrane or the dialysing membrane. This injury, which may be physiological or functional and histologically not demonstrable, impairs and reduces the impermeability to albumen of the membrane, so that now it can no longer perform its work satisfactorily, and albumen will appear in the urine; diffusion ceases and exudation takes its place. We have here, as a matter of fact, a condition comparable with what occurs in œdema; the common phenomenon underlying all the various forms of œdema, whether passive, inflammatory, renal, or anæmic and cachetic, is the increased permeability of the capillary membrane, *i. e.* increased transudation and exudation; all other factors are subsidiary to this.

Before proceeding further I must allow myself a digression on the pathology of "chronic parenchymatous nephritis." The term "chronic nephritis" implies "chronic inflammation." At all times, in my lectures and elsewhere, I have insisted on this, that such a thing as a chronic inflammation does not and cannot exist. What is generally, though erroneously, called chronic inflammation is the result, as a rule, of a previous inflammation, or of repeated attacks of inflammation, or of repeated or continued irritation. This result may show itself in two directions, (*a*) as a fibrosis or fibrous hyperplasia, or (*b*) as a degeneration; the two processes often occurring together. In "chronic parenchymatous nephritis," the parenchymatous degeneration is the result of a single or of repeated attacks of acute (or subacute) inflammation. It would be wise if the term chronic inflammation were given up unconditionally, being as misleading as it is incorrect—in fact it is archaic. The most remarkable change in so-called parenchymatous nephritis is the degeneration of the renal epithelium. The fibrous tissue increase, which is generally noticed in cases of "chronic parenchymatous nephritis," and which occasionally leads to a small white kidney, is merely the reaction of the connective tissue against an irritation and a degenerated or degenerating tissue. Tissue degeneration, if not repaired, leads to fibrosis: that is a pathological law of which we find instances everywhere; degenerated muscle fibres, degenerated nerves, necrosed liver cells, &c.—they all are replaced by invading and proliferated connective tissue.

To return. The essential phenomenon of "chronic parenchymatous nephritis" being degeneration of the renal epithelium, we can readily understand that the glomerular membrane also must suffer, and that its impermeability to albumen is impaired, if not abolished. In venous engorgement, in anæmia, in cachexia, in various forms of poisoning and intoxications, the epithelial degeneration can be readily demonstrated in those parts of the kidney where the epithelium lends itself to easy observation, and we have a right to assume that analogous changes also occur in epithelium less readily studied under the microscope; and often, indeed, they can be detected in the glomerular epithelium.

In all cases of albuminuria, then, we either have, or with justice may assume, a lesion of the glomerular membrane, which renders it permeable to albumen. This, however, is not all, for we find (1) that the amount of albumen present in the urine varies with the disease and the pathological condition present; and (2) that the quantity of urine passed stands in an inverse ratio to the intensity of the albuminuria. Why, for instance, should there be a much greater albuminuria in acute nephritis, or in advanced cases of morbus cordis, than in fever, cachexia, or anæmia? This also is easily explained. In an acute inflammation we have an extreme dilatation of the capillaries, with considerable retardation of the flow of blood through them, and an almost complete exudation of serous fluid through the endothelial wall, rendered more permeable during the process of inflammation. Exactly the same occurs in an acute nephritis. Diffusion being abolished, almost complete exudation takes place, and a fluid rich in albumen passes through the walls of the glomerular capillaries, and therefore also through the impaired glomerular membrane into the capsular space. The circulation being retarded, the amount of fluid exuded, as we shall explain below, is small. The tissue-

processes in acute nephritis are exactly the same as in inflammation elsewhere, *i. e.* they show themselves in the connective tissue primarily, and the changes in the renal glandular tissue are secondary to these. And just as with other forms of inflammation there appears a serous effusion due to the turgidity of the capillaries, and to increased permeability of the capillary wall, so also in acute nephritis we have a serous exudation from the renal capillaries generally, accompanied by an acute impairment of the impermeability of the glomerular membrane, *i. e.* considerable albuminuria. The fact that in acute Bright's disease the urine often contains blood, is evidence of the enormous permeability of the glomerular membrane. It must be remembered that the secretion of urine is not entirely abolished, because the function and activity of the kidney are not completely suspended.

Passing now to the well-marked albuminuria which is present in some cases of morbus cordis, we find that this is commonest in those cases where the venous engorgement is considerable, and where œdema is present. The dropsy is due chiefly to (1) capillary turgidity, (2) increased permeability of the capillary endothelium, and (3) diminished absorption by the lymphatics. Similarly, when the kidney is engorged in mitral disease, the capillaries are dilated, turgid, and full, the endothelium and glomerular epithelium are badly nourished, suffer, and become so permeable that almost pure plasma transudes into the capsular space, whence it is at once carried away by the uriniferous tubule.

In anæmia and wasting, occasionally slighter forms of œdema are met with, and these are explained by assuming that the capillary endothelium suffers with the rest of the tissues, and consequently becomes more permeable. Similarly, when in these conditions albuminuria is present, we may assume that the anæmia, marasmus, or cachexia have led to morbid changes in the glomerular membrane, so that it ceases to be impermeable to albumen; and this, in part at least, explains the albuminuria. Here it may be mentioned that with acute nephritis there is often also an increase of the capillary permeability in other parts of the body, leading to the appearance of renal œdema, so that there is a pronounced tendency towards leakage in the filtering membranes generally.

We can now also understand why in acute nephritis there should be a more intense albuminuria than with anæmia or cachexia. Just as inflammatory œdema is more intense than the œdema of anæmia, because there is a greater possibility of copious transudation on account of the coexistence of a high capillary pressure and an acutely increased endothelial permeability, so also in acute nephritis for the same reasons there must be a more intense albuminuria than with anæmia or cachexia. Again, just as cardiac dropsy is more intense than the anasarca of cachexia, so also the albuminuria of mitral disease is more intense than that of cachexia, because in the former disease there is a more intense capillary turgidity, even if the permeability of the endothelium be no greater.

In infective fevers the toxins manufactured by the bacteria exert a deleterious influence on the renal tissues. Evidence of this we find in the cloudy swelling, so frequently present in bacterial diseases. These degenerative changes probably lead to some degree of permeability of the glomerular epithelium, and, furthermore, the toxins frequently also cause a dilatation of the capillaries, and thus favour transudation.

We see, therefore, that in all cases of albuminuria we have changes which reduce the impermeability to albumen of the glomerular membrane, and in some cases there is also an accompanying rise of the capillary pressure: *diffusion ceases and exudation takes its place*, as we said above. It appears, as we shall see, that the intensity of the albuminuria varies directly with the intensity of the capillary pressure in the glomerulus, although the quantity of urine passed is independent of it.

Now, it might be asked why in "chronic parenchymatous nephritis" the albuminuria should generally be so intense. We can easily understand that the necessary permeability of the glomerular membrane is present, because the most striking lesion of the large white kidney is degeneration of the renal epithelium, whether fibrosis be absent or not—and this permeability to albumen is no doubt considerable. But, in confirmation of what we have said, in chronic parenchymatous nephritis there is also a marked capillary turgidity and a high capillary pressure. This must be so, because the large white kidney is greatly congested and the capillaries are widely dilated when we examine microscopical sections. Again, with this affection there is a marked tendency towards dropsy in other parts of the body, favoured by the hydræmic plethora which accompanies the disease. So that here also we have no exception to the above statement, that the albuminuria is rendered possible by the permeability of the glomerular membrane, but that its intensity depends on the glomerular capillary pressure. In anæmia and cachexia this pressure is low, and therefore there is but slight albuminuria.

This being so, it would seem difficult to explain why with albuminuria the amount of urine passed varies inversely as the intensity of the albuminuria, *i. e.* if there is much albumen present, the quantity of urine is diminished. Hence in acute and chronic parenchymatous nephritis there is a scanty flow of urine. How are we to account for this? It is curious that with "interstitial nephritis" there is generally but slight or inappreciable albuminuria, yet the amount of urine voided is considerably increased; and it is interesting that when a large white kidney gradually contracts, so as to become a contracting white kidney, the amount of urine passed gradually increases, the albuminuria gradually diminishes, and the œdema gradually

disappears. We find thus, that there is a close correlation, pathologically, between albuminuria and œdema, and that is what we have been contending for all along. With the progressing fibrosis, that is, as the kidney becomes more and more indurated, the amount of urine passed increases, and the heart *visibly* hypertrophies. We may therefore assume that the increased flow of urine depends, amongst other things, on the cardiac hypertrophy, in association with which we generally find hypertrophy of the tunica media of the arterioles and arterio-capillary fibrosis. The general blood-pressure, therefore, is considerably raised, and on this, it would seem, the increased flow of urine depends. With the advancing induration or contraction, many of the Malpighian bodies become encircled by fibrous tissue, and the glomeruli gradually become impervious, so that filtration or diffusion can no longer take place through them. How then can urine be secreted at all? Simply because islets of renal tissue remain unaffected, or even undergo hypertrophy. The fact that compensation is at all possible, implies that under ordinary conditions the kidney is not worked to the utmost, and therefore that it is possible that with a certain amount of functionally active renal tissue, and a high general blood-pressure, an increased amount of urine may be passed.

When a large white kidney contracts, fibrous rings also appear around many of the Malpighian bodies, and the glomerular membrane gradually becomes impervious, and hence the albuminuria gradually disappears. The fact that urine is voided at all means that some glomeruli have been left intact. The heart hypertrophies visibly, the general blood-pressure rises, and the amount of urine passed becomes increased, and concurrently with this increase, as we should expect, the œdema diminishes. It would seem, therefore, that there is this inverse relation between œdema and secretion of urine: (*a*) if much fluid transudes through the capillaries into the tissues, less fluid passes through the glomerular membrane, and (*b*) if much fluid transudes through the glomerular membrane, less fluid passes through the peripheral capillaries; (*c*) if little fluid passes through the peripheral capillaries, much urine will be secreted, and (*d*) if little fluid transudes through the glomerular membrane, much fluid will pass out through the capillaries elsewhere.

Since in cardiac disease with venous engorgement there is considerable œdema, we must expect a diminished transudation through the glomerular membrane; but in addition we have a low general blood-pressure, and therefore also a slow renal circulation. Hence it follows that with this form of albuminuria we must have scanty secretion of urine.

With acute nephritis there is no rise, or only a slight compensatory rise, of the general blood-pressure, the renal capillaries are distended, but the amount of blood flowing through the kidney, which conditions the secretion of urine, is not increased, but diminished rather and retarded on account of the inflammatory process, which, as is well known, often produces a general œdema of the interstitial tissues in the kidney. In all acute inflammations of some duration, the initial increased velocity of the blood-stream is followed by a gradual slowing down of the current, which may end in complete stasis. There is, therefore, ample reason why in acute nephritis there should be a diminished flow of urine, and this in its turn favours the intensity of the œdema in other parts of the body.

With a "chronic parenchymatous nephritis" we also have no marked rise of the general blood-pressure until the fibrosis appears, and again, no increased or accelerated flow of blood through the kidney, on account of the resistance offered to the blood-stream by the changes in the interstitial tissue which show themselves in the form of œdema and cellular infiltration. We find, therefore, with acute nephritis, "chronic parenchymatous nephritis," and cardiac kidney, all the factors necessary to explain a diminished secretion of urine, and all the factors necessary to explain the copious albuminuria. It must simply be remembered that the increased flow of urine and the volume of the transuded or exuded fluid do not depend on an increased glomerular blood-pressure, but on an increased and accelerated flow of blood through the kidney. Similar conditions we find in œdema: venous obstruction or inflammation, if the arterial blood supply be inadequate or insufficient, will not and cannot produce œdema.

The analogy between albuminuria and œdema is, therefore, fairly complete. The only difference is this, that the effusion into the tissues or serous spaces remains stagnant, because it is not absorbed by the lymphatics: diminished absorption, although an important element in œdema or dropsy, plays no part in albuminuria, because the capsular spaces into which the serous effusion passes are not closed cavities, but most efficiently drained by the uriniferous tubules.

In conclusion, I must state that these notes do not claim that perfection which I would desire, but are merely an attempt at explaining a few points which have always presented great difficulties to me whenever I have thought over the matter under discussion, or have studied Cohnheim, many of whose ideas will be found in these lines. I only hope that where I have leaned upon Cohnheim I have not misinterpreted him, and also that I have avoided obvious errors, whether clinical or physiological. I intend to return to this question in a subsequent number of our JOURNAL. In my next article, however, I shall discuss in a similar, cursory manner the meaning and pathology of "Chronic Inflammation."

WANT of space has compelled us to hold over one or two contributions. They will, however, appear in the October number.

A Case of Wiring for Fractured Olecranon in a Man aged 69.

By F. C. WALLIS, M.B., F.R.C.S.,

Assistant Surgeon to Charing Cross Hospital; Surgeon to the Metropolitan Hospital.

B. D—, æt. 69, was admitted into the Metropolitan Hospital on April 27th suffering from a fracture of the left olecranon, and also a transverse fracture of the right ulna. These injuries had been caused by a cart knocking the man down, and the horse trampling on him.

The fracture of the olecranon was oblique and comminuted; there was considerable effusion into the joint, and the whole arm was much bruised. It was not possible to keep the fragments in apposition by any splint.

The patient gave a healthy history, he was not a drinker, and the urine was normal.

On April 28th the man was taken to the theatre and operated on, under $CHCl_3$. A long incision of five inches was made over the olecranon, and the fractured ends thoroughly exposed; the fracture, of course, had opened into the joint, which was filled with clot. The surrounding tissues were infiltrated with blood.

The joint was well washed with 1:3000 perchloride solution, and all blood-clot removed; then the ends of the bone were brought together by some medium-sized wire, and a small piece of loose bone was removed altogether. The fractured ends came well together, and when the wire was screwed up the arm could be flexed and extended without any alteration in the apposition of the fragments.

The fascia over the muscles was brought together by a few fishing-gut sutures, the wound swabbed out with 1:20 carbolic, and then the skin united by a continuous horsehair suture. The wound was sealed up with collodion and gauze.

On May 2nd, four days after the operation, as the wound was quite free from pain, passive movement was commenced. May 8th, all stitches were removed, and the patient was allowed to use his arm for feeding purposes, &c. He left the hospital shortly after this, but has been seen several times since, and the condition of his joint and wired fracture is as good as it could possibly be.

Remarks by Mr. F. C. WALLIS.—This case is one of parallel interest to that which I published in the JOURNAL of last December, where the patella was wired in a man of 70. There are one or two points which make this case more than usually interesting. In the first place the man had broken both arms, and was perfectly helpless. If he had been treated by splints he would have continued helpless for weeks; as it was, passive movement began four days after the operation, within ten days he was using his arm for feeding, and long before the opposite arm was out of splints he had perfect use of the left arm. The condition of the joint is another point of interest. Before the operation it was much distended and tender; at the operation all the surrounding tissues were infiltrated with blood, and the joint was full of blood-clot. The free incision relieved the engorged condition of the tissues, and the joint was washed clean of all clot. After the operation the joint was painless and entirely free from any swelling or synovitis. A point of minor interest was the condition of the skin, which, on the outer side of the arm, had been badly "gravel-rashed." There was some inflammation and superficial suppuration from this, but the incised wound was closed up with collodion and gauze, and so perfectly shut off by this method that its aseptic course was in no way interfered with. Finally, the age of this man, and of the other case already referred to, go to confirm a fact which is not sufficiently recognised, viz. that old people otherwise healthy bear operations, and recover from them, exceedingly well.

The Hospital Dietary.

By J. W. W. STEPHENS,

Treasurer's Student.

BY observation and experiment, certain standard diets have been compiled which will preserve an average man in health under varying conditions of employment. The experimental method is this: "A healthy individual is selected, and the exact quantity of food-stuffs is estimated by experiment, requisite to preserve an equilibrium between the amount of carbon and nitrogen taken into the body, and that discharged from it." Or observation may be made of "the amount of food-stuffs present in the daily food used by communities of men, that used in families, by labourers of a class, and in ships."

I have taken the hospital dietary as an example of the latter method, analysed the amount of food-stuffs contained in the various articles of diet, and compared them with the standard diets of health of different observers. I omit entirely, as foreign to my object, any consideration of how this diet is modified in particular diseases, and especially in particular patients, but consider that this analysis may show concisely what amount of proteid, carbohydrate, and fat each patient is consuming, and may give a clear indication for the grounds of change in quantity of any constituent of the diet. I may illustrate this view by an example.*

König gives the following average composition of cow's milk and human milk—grammes in 100 cubic centimetres:

	P.	F.	C.	Ratio $\frac{N.}{n.N.}$
Cow's	3·55 ...	3·69 ...	4·88	$= \frac{1}{2·47}$
Human	2·29 ...	3·78 ...	6·21	$= \frac{1}{4·3}$

—*i. e.* cow's milk has excess of proteid and a deficiency of carbohydrate. A simple way of reducing this to the standard of human milk is to separate the cream from a pint of milk, then the casein is separated from one half the skimmed milk by means of rennet; the whey, the other half, and the original cream are now added together. The change that has been effected is to reduce the proteid to about 2 per cent.; thus:

$$\text{Casein } \frac{3·02}{2} + ·53 \text{ Albumen} = 2·04.$$

* P. is used to signify Proteid; F. Fat; C. Carbohydrate; N. nitrogenous; n.N. non-nitrogenous.

Milk treated in this way has an average composition:

	P.	F.	C.	$\frac{N.}{n.N.}$
Artificial Milk	2	4·5	5	$\frac{1}{4·7}$

We thus get a numerical expression of the advantage of human milk over cow's milk, and of artificial milk over the latter.

To revert to standard diets in health. Moleschott's standard for a man weighing 150 lbs., and doing medium work, may be taken as a good average diet. The quantities are measured in ounces, water free.

P.	F.	C.	$\frac{N.}{n.N.}$	$\frac{F.}{C.}$
4·6	2·96	14·26	$\frac{1}{3·7}$	$\frac{1}{4·8}$

The "standard" diets of a young doctor and a workman, as determined by Forster, are—

	P.	F.	C.	
Workman	132	81	458	Ratio $\frac{N.}{n.N.}=\frac{1}{4}$
Young Doctor	131	95	332	Ratio $\frac{N.}{n.N.}=\frac{1}{3·2}$

The quantities are given in grammes of dry food-stuff.

Further, the ratios $\frac{F.}{C.}$ are 1 : 5·6 and 1 : 3·4 respectively.

These figures indicate that the standard diet for the young doctor is rich in proteid and in fat, as compared with the total non-nitrogenous matter and carbohydrate respectively.

The data I have made use of in analysing the hospital dietary have been taken from the table in Stevenson and Murphy's 'Hygiene,' p. 417, vol. i.

IN 100 PARTS.

	Water.	P.	F.	C.	Salt.
Butter ...	6	3·3	88	—	2·7
Meat ...	72·5	21	5·5	—	1
Potato ...	74·98	2·08	1·5	21·01	1·09
Vegetable ...	91	1·8	·5	5·8	·7
Pudding (Rice)	13	8	1·0	76·5	1·0
Milk ...	87·5	3·4	3·6	4·8	·7
Bread ...	12·81	12·06	1·36	71·83	·96
Fish ...	78	18·1	2·9	—	1·0

FULL DIET (MEN).

	Oz.	Water.	P.	F.	C.	Salts.	
Butter	·5	·03	·016	·44	—	·0135	
Butter	·5	·03	·016	·44	—	·0135	
Meat	6	4·35	1·26	·33	—	·06	
Potato	6	4·5	·125	·009	1·26	·06	
Vegetable	4	3·64	·072	·02	·232	·028	
Pudding	4	·52	·032	·04	3·06	·04	
Milk	20	17·5	·68	·72	·96	·14	
Bread	18	2·3	2·171	·245	12·93	·018	
Total Meat Diet	59	—	4·37	2·24	18·44	·31	$\frac{N.}{n.N.}=\frac{1}{4·7}$; $\frac{F.}{C.}=\frac{1}{8·2}$
Fish	10	7·8	1·81	·29	—	·1	
Total Fish Diet	63	40·55	4·92	2·20	18·44	·33	$\frac{N.}{n.N.}=\frac{1}{4·4}$; $\frac{F.}{C.}=\frac{1}{8·38}$
Potato	8	6	·166	·01	1·68	·08	

FULL DIET (WOMEN).

	Oz.	H_2O.	P.	F.	C.	Salts.	
Butter	·5	·03	·016	·44	—	·0135	
Butter	·5	·03	·016	·44	—	·0135	
Meat	4	2·9	·84	·22	—	·06	
Potato	6	4·5	·124	·006	1·26	·066	
Vegetable	3	2·73	·054	·015	·174	·021	
Pudding	4	·52	·032	·04	3·06	·04	
Milk	20	17·5	·68	·72	·96	·14	
Bread	12	1·53	1·446	·163	8·62	·012	
Total	50	—	3·208	2·044	14·07	·368	$\frac{N.}{n.N.}=\frac{1}{5·02}$; $\frac{F.}{C.}=\frac{1}{6·7}$

CONVALESCENT DIET.

	Oz.	H_2O.	P.	F.	C.	Salts.	
Butter	·5	·03	·016	·44	—	·0135	
Butter	·5	·03	·016	·44	—	·0135	
Meat	4	2·9	·84	·22	—	·06	
Potato	6	4·5	·124	·006	1·26	·066	
Pudding	8	1·04	·064	·08	6·12	·08	
Milk	40	35	1·36	1·44	1·92	·28	
♂ Bread	14	1·8	1·68	·19	10·05	·014	
♀ Bread	12	1·53	1·446	·163	8·62	·012	
							♂ $\frac{N}{n.N}=\frac{1}{5·4}$ $\frac{F}{C}=\frac{1}{6·9}$
Total ♂	73	45·3	4·10	2·81	19·35	·589	
Total ♀	71	45·03	3·866	2·79	17·92	·534	♀ $\frac{N}{n.N}=\frac{1}{5·3}$ $\frac{F}{C}=\frac{1}{6·4}$

MILK DIET.

	Oz.	H_2O.	P.	F.	C.	Salts.	
Butter	·5	·03	·016	·44	—	·0135	
Butter	·5	·03	·016	·44	—	·0135	
Pudding	8	1·04	·064	·08	6·12	·08	
Milk	40	35	1·36	1·44	1·92	·28	
♂ Bread	14	1·8	1·68	·19	10·05	·014	
♀ Bread	12	1·53	1·446	·163	8·62	·012	
							♂ $\frac{N}{n.N}=\frac{1}{6·6}$ $\frac{F}{C}=\frac{1}{6·9}$
Total ♂	63	37·9	3·136	2·59	18·09	·401	
Total ♀	61	37·63	2·902	2·563	16·66	·399	♀ $\frac{N}{n.N}=\frac{1}{6·6}$ $\frac{F}{C}=\frac{1}{6·5}$

SPOON DIET.

	Oz.	H_2O.	P.	F.	C.	Salts.	
Milk	40	35	1·36	1·44	1·92	·28	$\frac{N}{n.N}=\frac{1}{2·4}$ $\frac{F}{C}=\frac{1}{1·3}$

If we now tabulate these ratios, we have—

	$\frac{N}{n.N}$	$\frac{F}{C.}$
1. Full Diet (man)	1 : 4·7 ...	1 : 8·2
2. Full Diet (woman)	1 : 5·2 ...	1 : 6·7
3. Convalescent (man)	1 : 5·4 ...	1 : 6·9
4. Convalescent (woman) ...	1 : 5·3 ...	1 : 6·4
5. Milk Diet (man)	1 : 6·6 ...	1 : 6·9
6. Milk Diet (woman)	1 : 6·6 ...	1 : 6·5
7. Spoon Diet	1 : 2·4 ...	1 : 1·3

Taking a general survey, we see that in this dietary non-nitrogenous food is present in greater proportion than is found in the standard diets of those in health, and the figures clearly show that the excess is in carbohydrate diet. Spoon diet is peculiar in that the proportion of proteid is in excess of that of a healthy individual; the reason of this lies in the fact that it is a diet composed solely of cow's milk.

I propose, before considering this dietary more closely, to compare it in a subsequent paper with other diets of the sick in use elsewhere, so that the basis for any criticism may be founded on a wider survey of facts.

A Contribution to the Rational Treatment of Phthisis in its earlier stages.*

By OTTO L. HOLST, L.R.C.P.Lond., M.R.C.S.Eng.

IT must be admitted that anything that is at all likely to improve the chances of consumptive patients, or that will prevent consumption from developing in individuals coming from a phthisical stock and showing all the characteristics of a predisposed condition, deserves to be discussed, if nothing more.

It is beyond controversy that the tubercle bacillus most commonly gains access into the human body through the lungs, and it is believed that only in those cases who offer a suitable soil does the bacillus thrive. A suitable soil, I take it, means that the lungs are in a state of mal-nutrition, from whatever cause. In consumptive patients, and in those predisposed to the disease, the chest is almost invariably flat and contracted, and moves badly in respiration; the effect of which is that the circulation in the lungs is carried on sluggishly, and the lung tissue in consequence becomes ill-nourished.

We know that a healthy individual does not use nearly the whole of his lungs for ordinary breathing purposes; how much less of the lungs would be used by a flat-chested person!

The part which is not used necessarily requires less blood than the active lung, and cannot, therefore, be in such good condition. Hence the liability of the apices to suffer.† If a large area of the lungs remain thus unused, or very little used, it will constitute just the kind of soil required by the bacillus to thrive in.

If the lungs could be brought to such a state of health as to be able to withstand the attack of the bacilli, these latter would be prevented from gaining a footing.

What more reasonable, then, than to employ means to widen and enlarge the chest cavity? Because then the lungs will expand as well, and their movements will become more free. As a result of the increased respiratory activity thus caused, more blood will flow to the part, the blood will be better aërated, more blood-cells will pass through the lungs, and so an advantage will be given to the phagocytes to resist the attack of the bacilli.

In order to obtain this result, not only should patients be placed in the most favourable conditions hygienically, but they would require special movements—or, as they may be termed, "*therapeutic exercises*"—to widen their narrow chests, and to enable them to give their lungs proper and efficient ventilation.

The cases that are likely to benefit by a course of therapeutic exercises are those who by their family history and their physical development show a predisposition to the disease, and those actually in the first stage of the disease.

Hæmoptysis in a slight degree need not be an obstacle to the treatment. It is a mistake to think that these exercises will *cause* hæmoptysis; and in support of this contention I will quote an extract from a leading article in the *Lancet* (August 31st, 1895, p. 535): "That the cautious and judicious practice of various forms of respiratory gymnastics tends to hæmorrhage is, we think, a mistake; for experience shows that in a large proportion of cases pulmonary hæmorrhage does not follow upon exertion, and that it is comparatively frequent at night and in the early morning, when the patient has been for some time at rest."

I venture to think that the main cause of hæmoptysis at night in the *early* stage of phthisis—thus setting aside cases of pulmonary aneurisms—lies in an obstruction to the free flow of blood through the changed and diseased lung tissue, which in its turn leads to congestion and engorgement of the pulmonary capillaries. It is as if in a system of elastic water-pipes, with an obstruction in their course, water was being continually pumped; a stage would sooner or later be arrived at when the pipe would give way. Anything that removes the obstruction by creating a call for blood elsewhere in the body would prove exceedingly beneficial. Hæmoptysis is nature's effort to remove the obstruction, but this is a remedy with two edges. A better method is to give gentle passive and active exercises to arms, legs, and abdomen, in order to attract blood away from the centre to the periphery. "Ubi stimulus, ibi affluxus." At night and during absolute rest, no call being made on the "fluid of life" to the voluntary muscular system, the blood collects, relatively speaking, in the internal organs. It is quite plain, however, that no exercises demanding an exertion must be given, for by stimulating the heart to increased action one would—to use the simile of the water-pipes—increase the power of the pump in a greater measure than the obstruction to the flow could be relieved; hence the very thing to be avoided would be brought about.

I will here describe as briefly as possible a few of these therapeutic exercises, beginning with the weaker ones.

The important points to remember in them all are—

(*a*) The attitude of the patient, *i. e.* the chest well in evidence.

(*b*) That the exercises must be carried out slowly and with due regard to the state of the patient.

(*c*) The insistence on frequent and deep inspirations and slow expirations.

I. *Flexion and Extension of the Arms.*—The patient lying flat on a high couch, and the movements being resisted by the operator. The elbows must move in a plane with the couch, so as to obtain a good expansion of the chest.

II. *Extension of the Trunk.*—The patient sitting on a low stool, leaning forward, and the physician resisting the straightening of the body by applying his hands on the shoulder-blades of the patient.

III. *Vibration of the Lungs.*—The patient in a semi-reclining position. The movement is performed in the following way:—The operator stands in front of the patient, places both hands, one under each of the patient's clavicles; the patient is told to take a deep breath, and during the expiration a vibratory movement is given by the operator's hands as long as the expiration lasts, and a little longer. Then the hands are moved lower down on the chest and the same performance gone through, till the operator's hands have covered consecutively the whole surface of the chest, front and back. This movement must not be used in cases of even slight hæmoptysis. It is, however, useful to clear the air-passages of mucus, and to impart tone to the bronchial walls.

IV. *Opening and Closing the Arms* (held stiff and extended) against the resistance of the operator.—The patient sitting leaning forward on a low stool. The opening of the arms is performed during a deep inspiration, the closing during a prolonged expiration.

V. *Hacking and Clapping over the Lungs.*—The patient in a semi-reclining position. This movement is unsuitable in a patient prone to hæmoptysis, and should at all times be performed very carefully. It tends to give tone to the muscular tissue of the bronchi as well as to the external muscles of respiration; it also promotes expectoration.

VI. *Lifting of the Shoulders.*—The patient sitting erect on a low stool, the operator stands behind with one hand in front of and grasping each shoulder of the patient. As the patient takes a deep inspiration the operator lifts the shoulders, and pulls them at the same time somewhat backwards; he lets them down gradually as the patient expires slowly. The patient must not allow himself to be lifted off the stool, and there should be a firm cushion between the operator's knee and the patient's back, so as to enable the former to give the chest a good expansion.

STRONGER EXERCISES.

I. *Flexion and Extension of the Arms.*—The patient sitting erect on a low stool, the operator resists both movements. A cushion is placed between the operator's knee and the patient's back, and the elbows are kept well back during the movements up and down, so as to ensure a good expansion of the chest.

II. *Extension of the Trunk.*—The patient standing leaning over the end of a couch, a firm cushion intervening. The operator resists the straightening of the body with his hands on the shoulder-blades of the patient.

III. *Pulling forward of the Chest.*—The patient stands on tiptoe with his back to a pole provided with cross-bars, and grasps one of them high up with both hands. The operator stands in front of the patient, applies both hands on the shoulder-blades of the patient, and pulls him forward, whilst the patient takes a deep inspiration; he then lets the patient go slowly back during expiration.

These are the simplest forms of therapeutic exercises, but they will, I think, serve my purpose sufficiently well to illustrate the kind of movements that should be used.

The effect of the treatment is beneficial not only to the lungs; it strengthens and invigorates the heart as well. When dyspeptic symptoms are present, the treatment should be directed to the digestive organs in the form of gentle kneading to the stomach and bowels. This is especially useful where any tendency to vomiting exists.

Dr. Frederick Taylor, in his book on *Medicine*, in discussing the treatment of phthisis, says, "Our chief reliance must be on the improvement of the body and its tissues in *every possible way*,* so

* A Paper read before the Eastbourne Medical Society.

† In support of this theory Dr. Fagge quotes the names of Dr. Hamilton (*Practitioner*, 1880) and Dr. Rindfleisch (*Ziemssen's Handbuch*).

* The italics are mine.

that it may be enabled to resist the inroads of the disease; or, rather, that the tissues may become less fitted as a soil for the bacillus, and less readily excited to inflammation in its different forms."

I think that therapeutic exercises, together with good and suitable food and plenty of fresh and pure air, go further to fulfil these desiderata than any other treatment. The exercises may be given whilst the patient is wearing an ori-nasal respirator containing creasote, guaiacol, eucalyptol, or any other volatile agent that may be desired.

It may be thought that ordinary gymnastics or dumb-bell exercises ought to answer the purpose perfectly well without resorting to any *special* treatment, but this idea will be abandoned on further consideration. It is not healthy individuals with whom we have to deal, but delicate, unhealthy specimens who require careful and individual attention, such as cannot be given in a gymnasium, where the patient forms but a unit in a class.

On Three Cases of Tetanus, treated at the Taunton and Somerset Hospital.

Reported by W. H. MAIDLOW, F.R.C.S., late Resident Medical Officer.

WHEN a disease is rare, usually fatal, but maintained to be curable by a specific treatment, I consider there should be no great hesitation in reporting it, so, having permission, I hasten to report three cases of tetanus in the Hospital JOURNAL—a most appropriate medium, indeed, for it is the journal of the Hospital from whence at present the best English criticism of antitetanotoxin has emanated. The following are brief notes of the cases:

CASE 1.—J. S—, æt. 46, labourer, admitted October 29th, 1895, in alcoholic state with history of having been kicked in face by a horse two hours before. He had lacerated wounds about the nose and cheek, which were treated in the usual way, and except for difficulty in keeping the nostrils clean, they all did quite well. October 30th, well enough to walk about ward. November 3rd, jaws "felt stiff," but only noticeable thing was a much swollen face. November 5th, marked trismus. 6th, two severe spasms.* 8th to 10th, more spasms, with trismus and cervical rigidity in intervals, great dysphagia; fed by nutrient enemata containing also chloral, bromide, and opium, which treatment was continued throughout, and each spasm was controlled by chloroform. 13th, worse in every way. antitetanotoxin gr. xxx (from Brit. Institute) injected into back. After this spasms became less severe and less frequent, so that no more chloroform was given. 14th, delirious and pulse failing, attacks very frequent, but milder; gr. xv antitetanotoxin given. 15th, conscious but very despondent; most of body rigid. 16th, slightly better, and able to drink; gr. x antitetanotoxin, but in a dying state all night. 17th, nasal tube passed for feeding in hope of keeping up strength. Death suddenly during its passage. P.M.—Fatty liver; no milk had passed into air passages, but into stomach.

CASE 2.—J. S—, æt. 24, waggoner, admitted in alcoholic state September 9th, 1895, with lacerated wound of palm and compound comminuted fracture of right leg at lower third. Three hours after infliction leg amputated at "seat of election" by lateral flaps through apparently sound tissues, and palmar wound carefully dressed after ligature of ulnar in two places. September 10th, leg dressed; signs of traumatic gangrene. This remained local, and in a few days line of demarcation appeared. The hand wound did well, but at onset of symptoms it was kept soaked in 1 : 2000 solution of perchloride of mercury, whilst the stump was treated with irrigation of same fluid, sloughs being daily cut away. September 17th, trismus. 18th, risus and cervical rigidity; gr. x antitoxin (Brit. Inst., three months old) injected into back. 19th, spasms on deglutition; gr. xxx Tizzoni's antitoxin, nutrient enemata, and nasal feeding under chloroform once daily. 20th, much worse, at least sixteen spasms, and very despondent; in intervals persistence of risus and opisthotonos; temperature 103°; a vesico-papular eruption noted; gr. xxi antitetanotoxin injected. 21st, gr. xix, but much worse in every way, but could swallow and open his jaws in the evening. He became unconscious during the night, and died after a series of convulsions. No p.m. was made.

CASE 3.—E. H—, æt. 22, domestic servant, admitted May 27th, 1896, with history that on May 12th (fifteen days before) she had run a rusty nail into "pulp" of right ring finger; except for local pain, remained quite well till May 24th, when she noticed rigidity of jaws. May 26th, painful and stiff neck. She was a well nourished, rather obtuse girl, having on the palmar surface of terminal phalanx of finger an unhealthy-looking wound, at the bottom of which was exposed the flexor tendon; no lymphangitis or enlarged glands. Well marked risus and cervical rigidity. Finger amputated at metarcarpo-phalangeal joint, where the part looked quite healthy, but for precaution the stump was kept soaked for a few minutes in 1 : 1000 Hyd. Perchlor.; it subsequently did well. Put on mixture of chloral, bromide, cannabis indica, with occasional hypodermic injection of morphine. She was able to swallow fluids almost throughout, but was fed also by nutrient enemata. May 29th, during night nine minor spasms; there is great exaggeration of knee-jerks, no clonus; well under influence of narcotics. The + knee-jerks persisted for three weeks. 30th, four spasms during day, but never intense; expression typical; much pain in the neck and back, where muscles are very rigid; constipation very troublesome. 31st, bowels opened after calomel and Ol. Crotoni, but decidedly better, can open jaws quite three-quarters of an inch, no more spasms; gr. xxx Tizzoni's antitetanotoxin injected into back. June 1st, delirious all night, urine and fæces passed involuntarily, abdomen now rigid, but not tender; gr. x injected. June 2nd, risus nearly gone; gr. iv injected. 3rd, spasm last night and this morning; no more antitetanotoxin given from this date. From now till the 26th, record is one of daily improvement, muscular rigidity disappearing in the order of onset, the abdominal muscles remaining rigid, but not painful, till about July 6th. June 26th, after a few days' constipation, rise of temperature to 102°, and pain along saphenous vein of left leg, with painful right ankle; both knees flexed tightly. Narcotics, which had been diminished, increased again. 28th, swelling and tenderness of left wrist and both knee-joints; temperature 103°, and erythematous rash. Put on Sod. Salicylate, and she quickly improved. The condition was very suggestive of pyæmia. No cardiac lesion. July 16th, beginning to walk about. Considered cured.

Remarks.—Space must be too short to allow of much analysis of these cases, but there are several important considerations that I should like to emphasise, and deductions to be made therefrom. It will be seen that 1 and 2 were acute cases, having a latent period of six and eight days respectively, with rapid onset of symptoms; whilst the third was more subacute, with latent period of fifteen days, and gradual onset of symptoms. Cases 1 and 2 were "bad subjects;" Case 3 a healthy domestic servant. In none could bacillus tetani be demonstrated. Cases 1 and 3 were treated with narcotics; Case 2 with the antitoxin only. As regards the antitoxin, in Case 1 the spasms did seem less severe if not much less frequent, Case 2 seemed in nowise improved, whilst Case 3 was recovering before its use; and, in fact, nothing but a very sudden improvement could have shown its value. As a matter of fact, nothing pointing to its value here could be seen, and to Mr. Blagden, my colleague, who looked after her very carefully during my absence, she always seemed delirious after its use. In fact, she was one of the 30 or 40 per cent. of chronic or subacute cases that recover *vi naturæ*, helped by narcotics and proper nourishment. In all cases, gr. x of either antitoxin was dissolved in 3j boiled distilled water, and injected as cleanly as possible into the lumbar region,

* The word "spasm" used is meant to connote attacks of convulsions with the well-known dramatic accompaniments of blueness, opisthotonos, and distress in this disease.

and seemed to cause no local disturbance or eruption. It is important, I think, to satisfy oneself that there is not an antitetanotoxæmia before using this, to my mind, at present *sub judice* remedy as a prophylactic. As regards some other clinical points, both the two fatal cases could open their jaws and swallow twenty-four hours before death. This must not, then, be looked upon necessarily as a good omen, but a sign perhaps of exhaustion; whilst in the cured case the rigidity disappeared in the order of its onset apart from exhaustion. I am told that if a horse with tetanus has his constipation relieved he will recover, which probably means he has his bowels moved because he is recovering; rigid abdomens must account for some of the constipation, but remembering what may happen from constipation and what from purgation, purgatives must be important agents in this infective disease. I find all the cases of recovery here—and tetanus seems comparatively common in the West of England—are those that have been kept under morphine. From these few considerations—

1. I am sceptical of the value of antitetanotoxine, although I do not think it does harm.

2. If it be used, other agents must also be used—drugs such as chloral, bromide, and cannabis indica, and especially morphine.

3. The strength must be supported with alcohol and nutrient enemata, with at least one good nasal feeding daily, under chloroform if there is any excitation of spasm by its use.

4. For the spasms chloroform should be given.

5. Keep bowels open, and the patient in a dark room away from the noise of the ward.

6. Lastly, but not leastly, and it is almost insulting, I fear, to mention it—nerve section, nerve stretching, are so much fetish; if in doubt, amputate and excise, and sterilise.

Servare modum, finemque tenere, naturamque sequi—"Lucan." lib. ii. v. 381.

Notes.

As we anticipated, the difficulty of adjusting the opposition to the University of London Commission Bill proved too great to be overcome in time for the Bill to pass in the last session of Parliament. We must now rest content to wait till next year, and live in hope that the business of Parliament may not be too great then to enable this urgently needed reform to become a fact.

* * *

AT the Competition for the Army Medical Service in August we hear that twenty-six candidates presented themselves for twenty-five vacancies, but that only thirteen were reported by the examiners as obtaining the qualifying marks! This is a poor record.

* * *

IN the Competition for the Indian Medical Service three Bart.'s men presented themselves, and all were successful. Mr. J. M. Woolley was second with 2988 marks—only 17 marks behind the first man; G. A. F. Sealy was seventh with 2546 marks, and J. H. Hugo was eighth with 2526 marks.

* * *

THE examination for the Entrance Scholarships in Science and the Jeaffreson and Preliminary Scientific Exhibitions begins on September 23rd next.

* * *

MR. H. J. WALTON, whose success at Netley we recorded last month, goes to the Bengal Medical Service, as also does Mr. J. S. Stevenson. Mr. F. A. Smith goes to Bombay, and Mr. W. G. Richards to Madras.

* * *

DR. C. R. STEVENS, of the Bengal Medical Service, has been promoted to be Surgeon-Captain as from July 29th last. Mr. T. H. Foulkes, of Madras, has also been promoted to be Surgeon-Captain.

* * *

IN our announcement in the last number of the appointments of officers in the Royal College of Physicians, we inadvertently omitted to mention the appointment of Dr. Church to the office of Senior Censor. The Senior Censor is elected separately from the other censors, and is the highest officer in the College after the President.

* * *

DR. CLAYE SHAW will begin his course of lectures on Mental Physiology for the M.D. and M.S. London, on Wednesday, October 7th, at 11 a.m., in the Medical Theatre. The Clinical Lectures at Banstead will begin on Monday, October 12th, at 11.30. These lectures are free to all Bart.'s men, and Students of other Schools can attend on payment of a fee of £3 3*s*.

* * *

SURGEON-LIEUTENANT-COLONEL RANKING is taking an active part in the formation of a Pasteur Institute in India.

* * *

SURGEON-CAPTAIN F. O'KINEALY, who has been on tour with the Lieutenant-Governor of Bengal, has returned to his appointment as Resident Surgeon to the General Hospital, Calcutta.

* * *

SURGEON-CAPTAINS BIRD and C. R. STEVENS have been appointed Resident Surgeons to the Medical College Hospital, Calcutta. The latter is appointed to the Eden Hospital for Women and Children.

* * *

SURGEON-CAPTAIN PEARSE is Staff Surgeon to the troops in Fort William. The services of Surgeon-Captain Oldham have been temporarily placed at the disposal of the Jail Department.

* * *

WE REGRET to announce the death at Murree of an old Bart.'s man, Surgeon-Captain Barber, M.B.Cambridge, of enteric fever.

IT IS a regrettable fact that we have not received a single account of a Decennial Club's Annual Dinner. Surely these important *réunions* of old Bart.'s men should be reported in the JOURNAL. Secretaries of Decennial Clubs please note.

* * *

IN ORDER to prevent appointments and holidays from conflicting as they have hitherto done, the appointments of Dressers and Clerks will in future commence on the 1st of January, April, July, and October, instead of February, May, August, and November. The new arrangement will come into force on the 1st of October next.

* * *

IN the *Quarterly Medical Journal* for July we notice an excellent paper "On Certain Protozoa occurring in the Intestine," by an old Bart.'s man, Christopher Addison, M.D.Lond., F.R.C.S., Lecturer in Anatomy at the Sheffield School of Medicine. The paper is both short and clear, and we commend it to the notice of those who are interested in these organisms.

* * *

WE are requested to announce that the drawing for parts will take place in the Rooms on Friday, October 2nd, at 10.30 a.m.

Amalgamated Clubs.

FOR the benefit of freshmen coming up to the Hospital in October, and men who have come up during the summer, who wish to play football or hockey or to box, it may be as well to mention here the names of the captains and secretaries of the various clubs. A freshman, as a rule, seems to find some difficulty in getting to know the ins and outs of the different clubs until he has been up at the Hospital for some time. Either he does not see the notices on the club boards or he does not like to find out the Secretaries and offer his services. Consequently some keen men are now and again overlooked, as they have not been down to the trial matches, and their talent may be only discovered by accident late in the season, when they have probably joined some outside team or have given up the idea of playing that season, and have therefore become very much "out of form." Every freshman coming up to the Hospital in October will join the Amalgamated Clubs,—at least we hope so. He will then receive the JOURNAL, and will learn below whom to go to if he wishes to play for one or other club. Notice-boards of the various clubs are hung up in the entrance to the School buildings just opposite to the Library door, and also in the Smoking Room, where the teams and notices of meetings, &c., are posted. A paper will be put up on each board early in October, where men who are going to play this winter are requested to write their names, so that the Secretaries may have a list of men to choose the teams from. Practice games will be held as soon as possible at Winchmore Hill, and all players, especially Freshmen, are expected to be present, so that the club officials may be able to select the teams and place men in them according to merit.

Bart.'s have always been well up in the different Inter-Hospital competitions, and this has been chiefly due to men always considering their Hospital to have "first call" on them even if much better teams outside have offered them places. This is the only way in which we can hope to continue holding our own, and it is sincerely hoped that all men who join the Hospital will offer their services first of all to "Bart.'s."

The Amalgamated Clubs' ground at Winchmore Hill is open every day, and men can go down at any time and practice, should they wish to.

RUGBY FOOTBALL CLUB.

The Captain is Mr. H. M. Cruddas, and the Secretary Mr. A. J. Wells. The team is not, at present, expected to be quite so good as last year, as one or two men are not able to play this year. Thus Mr. H. Bond, last year's captain, is out of his year, and Mr. J. W. Nunn is unable to play owing to an injury to his knee. However, there are rumours of one or two good men coming up, so that, after all, the team may be as good as last year, and, with a good fixture card arranged, a successful season is anticipated.

ASSOCIATION FOOTBALL CLUB.

The Captain is Mr. R. P. Brown, and the Secretary Mr. E. W. Woodbridge. The valuable services of Mr. E. H. B. Fox in goal, and Mr. A. Hay, outside left, will be lost this year, both men being out of their year. A goal-keeper is a very difficult position, as a rule, to fill up, but amongst the number of men at the Hospital now, or those coming up, a competent man should be found. The fixture list is nearly complete, but the great difficulty is to get teams to go down to Winchmore Hill, owing to the fact that we take no "gate," and therefore cannot afford to pay clubs any portion of their travelling expenses, which most of them require now; and these clubs will rather pay our expenses to go down and play them on their own ground twice than come up to Winchmore Hill without travelling expenses. Amongst the fixtures for this season, notable additions are Eastbourne and Old Westminsters, both of which should be very good games.

The Inter-Hospital Association Cup was won by Bart.'s last year, St. Mary's Hospital being our opponents in the final match at Leyton.

HOCKEY CLUB.

This club has been started this year, but has not yet been admitted as one of the Amalgamated Clubs, but will probably be admitted at the annual general meeting in October. Mr. F. H. Nimmo is the secretary *pro tem.*, and he will be glad to receive names of any men who are

willing to play in the team. None of the other hospitals have yet started a hockey team, but we hope that in a year or so they will follow our example, and that an Inter-Hospital Hockey Cup Competition will be formed. The Hockey Club ground will be at Winchmore Hill, where arrangements will be made with the Association and Rugby secretaries, so that the Hockey team can play on one or other ground when there is no football match.

Several good men have promised to play for the Hospital, and there should be no difficulty in raising a team at any time during the season.

BOXING.

Mr. C. G. Meade is Captain and Mr. J. W. Hughes the Secretary. The Boxing-room is in Red Lion Passage, Bartholomew Close, and on Thursdays Professor Alec Roberts attends from half-past four until half-past six for the purpose of teaching any men who may wish it.

Any further information which may be required will be gladly given by any of the captains or secretaries mentioned above.

Cricket Club Season, 1896.

THE past season of the above club has been one of the most, if not the most successful for many years. In the Cup Ties the Hospital did exceedingly well, beating King's and Guy's, and, after having all the best of the final with Thomas's, the match had to be abandoned owing to the weather. J. C. Sale, who came up this summer, batted consistently well throughout the season, and Greaves, although unable to play often owing to exams., scored very well, and came out at the top of the averages. E. F. Rose was the most successful bowler, and did good service in almost every match. The only two centuries were obtained by J. C. Sale against King's and against P. E. Tuckett's XI. Of the other bowlers, Scoones and Whitwell both rendered useful service. We were unfortunate in losing J. A. Willett half-way through the season owing to a broken finger, and several other members of the team were prevented from playing as much as usual owing to exams.

The final for the Cup Tie with Thomas's will probably be played next May, as it was found impossible to raise teams during August, most of the fellows on both sides having gone down.

The averages are given below.

CRICKET AVERAGES, 1896.

	Innings.	Not out.	Runs.	Most in innings.	Average.
†H. S. Greaves	10	1	314	99	34·88
†J. C. Sale	16	1	500	151	33·33
J. A. Willett	5	0	122	66	24·4
F. H. Maturin	5	1	97	36*	24·24
J. F. Fernie	6	0	134	86	22·23
†G. C. Marrack	16	5	212	36	19·27
†W. H. Randolph	11	1	192	73	19·2
†H. E. Scoones	13	1	228	75	19
†E. F. Rose	17	3	232	72*	16·57
†H. Whitwell	12	0	162	60	13·5
†A. E. Jeaffreson	4	0	46	24	11·5
†H. Bond	15	1	149	35*	10·64
†H. J. Pickering	11	1	101	47	10·1
†C. G. Watson	12	1	101	33	9·18
C. A. S. Ridout	4	0	29	16	7·15
†H. W. Pank	7	2	33	18*	6·6
†J. W. Nunn	3	0	15	7	5
T. M. Body	4	1	14	11	4·65
A. H. Bostock	4	2	7	5*	3·5

* Not out. † Played in Cup Team.

Pathological Laboratory.

Bacteriology and Public Health.—Dr. Kanthack will begin his next class in Elementary and D.P.H. Bacteriology on October 19th, at 2 p.m., in the Pathological Laboratory. The class will meet on Mondays, Wednesdays, and Thursdays, at 2 p.m. Gentlemen intending to attend the course are requested to communicate with Dr. Shore as soon as possible.

Pathological Clerks.—Gentlemen wishing to act as Pathology Clerks under Dr. Kanthack or the Surgical Registrar from October to December are requested to send their names in to Dr. Kanthack as soon as possible.

Dr. Kanthack will begin a course of instruction in the practical methods of section cutting and staining, and of examining Ward-material, in October. This course is open only to the Pathology Clerks and to Research Clerks.

Appointments.

GRIFFITHS, J. Howell, M.B., B.S.Lond., M.R.C.S.Eng., L.R.C.P. Lond., appointed Assistant Medical Officer to the Brook Hospital, Shooter's Hill, S.E.

* * *

GARDNER, H. Willoughby, M.D. Lond., M.R.C.S., L.R.C.P., has been appointed Physician to the Salop Infirmary.

* * *

EVANS, E. Laming, M.B.Camb., has been appointed House Surgeon to the Belgrave Hospital for Children.

Examinations.

L.S.A.—*Medicine, Forensic Medicine, and Midwifery.*—C. J. Macdonald. *Forensic Medicine.*—T. B. Bookenham.

* * *

INTERM. M.B. LOND.—*Excluding Physiology*—S. R. Scott, L. A. Walker. *Physiology only*—J. H. Rhodes, J. E. Robinson, P. W. Rowland, and G. P. Tayler.

* * *

PREL. SCI. LOND.—*Honours.*—R. C. Elmslie (*1st in First Class Honours in Chemistry*); S. G. Mostyn (*1st in First Class Honours in Physics*); J. A. Lloyd (*Third Class Honours in Physics*). *1st Division*—F. N. White. *2nd Division*—E. W. J. Ladell, R. A. Lloyd, H. Love, E. E. Young. *Chemistry and Physics.*—E. C. Mackay. *Biology.*—R. A. S. Sunderland, A. E. Thomas.

* * *

FIRST M.B. DURHAM.—P. M. Perkins and R. Thorne-Thorne have passed in Chemistry, Physics, and Elementary Anatomy; H. G. Harris has passed in Chemistry and Physics; and E. G. Klumpp has passed in Chemistry, Physics, and Botany.

* * *

THE names of H. J. May and H. Holmes were accidentally omitted from the last list of those who passed the second part of the Third M.B. Cambridge as published in the JOURNAL.

Scholars and Prize Winners for the Past Year, 1895–6.

Lawrence Scholarship and Gold Medal.—S. Gillies.

Brackenbury Medical Scholarship.—J. Hussey.

Brackenbury Surgical Scholarship.—G. V. Worthington, H. Williamson } Æq.

Matthews Duncan Medal and Prize.—1. *Not awarded.* 2. G. E. Dodson, T. J. Horder } Æq.

Senior Scholarship in Anatomy, Physiology, and Chemistry.—H. A. Colwell.

Open Scholarships in Science, Chemistry, and Physics.—J. S. Williamson.

Biology and Physiology.—C. S. Myers.

Junior.—R. C. Bowden, R. H. Paramore } Æq.

Preliminary Scientific Exhibition.—J. C. M. Bailey.

Jeaffreson Exhibition.—H. A. Kellond-Knight.

Kirkes Scholarship and Gold Medal.—G. A. Auden.

Bentley Prize (Surgical).—T. J. Horder.
Hichens Prize.—F. R. Brooks.
Wix Prize.—(*Not awarded.*)
Harvey Prize.—F. C. Borrow.
2. W. S. Danks.
3. L. A. Walker.
Sir George Burrows Prize.—T. J. Horder.
Skynner Prize.—(*Not awarded.*)

Practical Anatomy, Junior.
Treasurer's Prize.—A. E. J. Lister.
2. A. T. Compton.
3. C. A. S. Ridout.
4. R. H. R. Whitaker.
5. G. M. Seagrove.
6. J. S. Williamson.
7. J. C. Marshall. } Æq.
   A. T. Pridham. }
9. A. R. Tweedie.
10. A. H. John.

Practical Anatomy, Senior.
Foster Prize.—H. Burrows.
2. F. C. Borrow.
3. S. R. Scott.
4. C. S. Frost.
5. W. H. Leonard.
6. H. S. Thomas.
7. W. S. Danks.
8. T. B. Haig.

Shuter Scholarship.—F. A. Rose.
Junior Scholarships.—R. H. Paramore.
2. A. R. Tweedie. } Æq.
   J. S. Williamson. }
Junior Scholarship in Chemistry (1895).—1. L. A. Walker.
2. R. Walker.

Correspondence.

To the Editor of St. Bartholomew's Hospital Journal.

CARBUNCLES AND PLAGUES.

Sir,—In reply to Mr. L. Brown's question as to the reliability of my statement that in the ancient plagues, buboes and carbuncles were identical, I should, perhaps, in my paper, have added the word "probably:" my reason for so doing being, that in several cases of true plague which I met with in the far East, although there certainly were examples of true bubo amongst them, still the majority of the skin and subcutaneous lesions which were present in these cases partook more of the nature of carbuncle, both by their position (back and chest) and their appearance. Since, however, looking up some of the authorities on plague, I confess that the frequency of the one or other seems to vary in different epidemics. Of course my statement as to what took place in the 16th and 17th centuries is, like the statements of others relating to the same period, merely conjectural, and I was simply judging by analogy, comparing cases of which I had READ with cases which I had SEEN.

Thanking you in anticipation for the insertion of this letter,

I am, faithfully yours,

R. MILBOURNE WEST,
M.R.C.S., L.R.C.P.Lond., Leicester.

To the Editor of St. Bartholomew's Hospital Journal.

OLD BART.'S MEN IN INDIA.

Sir,—It may interest you to have one more proof that Bart.'s men once are Bart.'s men always, though they be separated from their *Alma mater* by continents and oceans, wide as the poles asunder.

The memory of the dull grey quadrangle still gladdens the heart of all her sons who have left their kindly mother's loving care.

When a few of them meet in foreign climes they rush into each other's arms, and say: (*a*) What news of Bart.'s? (*b*) Let us have a Bart.'s dinner.

Such a little gathering took place on August 24th at the United Service Club, in Calcutta, when six Bart.'s men met at dinner. There were present: Surg.-Lieut.-Col. Ranking, I.M.S., who presided, Surg.-Capts. F. O'Kinealy, I.M.S, Pearse, A.M.S., R. Bird, I.M.S., B. Oldham, I.M.S., C. R. Stevens, I.M.S. Surg.-Lieut. A. F. Stevens, I.M.S., who was unable to be present in the flesh, as he is recovering from an attack of enteric fever, was present in the spirit. We thought "Bart.'s," talked "Bart.'s," and drank "Bart.'s" and "Absent Friends."

The swing of the punkah, the gradually collapsing collar, and other Oriental attributes faded in oblivion, and once more we walked and talked in the old square, and listened to the pigeons splashing in the fountain, and to each other's reminiscences of the giants of the past, and of those who have succeeded them.

So the night passed, and in the small hours of the morning we parted only to repeat the same scenes in our dreams.—I am, etc.,

YOUR CALCUTTA CORRESPONDENT.

Calcutta, Sept. 1st, 1896.

New Productions.

EVER to the fore in their endeavour to minister to the comfort of the general practitioner, Messrs. Burroughs, Wellcome & Co. have brought out some new "soloids" containing the various antiseptics in common use. They are made of a different size and shape from the ordinary tabloids for internal use, and all have a distinctive colour, so that there may be no risk of accidental poisoning. The distinctive colour is communicated to the liquid in which they are dissolved, so that it cannot be confused with any other solution in general use in the sick room.

We may add that the "soloids" are prepared in such a way that they dissolve in water with great readiness.

The soloid of carbolic acid contains 5 gr. of the chemical, and in addition to its use in the preparation of lotions, the soloid itself can be used in the treatment of foul ulcers with pure carbolic acid—the soloid being held in a small piece of cotton wool and gently rubbed over the surface. Other soloids are prepared containing respectively—Hydrarg. Perchlor. gr. 1·75, making in four ounces of water a solution of 1 in 1000; Pot. Permang. gr. v, Zinci Chlor. gr. j, and Argent. Nit. gr. j.

Messrs. Burroughs, Wellcome & Co. have also sent us specimens of their tabloids of Vinum Ipecacuanhæ, containing 5 minims. They are said not to undergo change in the same way that the liquid does when kept for any length of time. Tabloids containing respectively 5 grs. of Piperazine, 1 gr. of Uranium nitrate, 3 gr. of Antipyrine with 1 gr. of Caffeine, 5 grs. of Lithia bitartrate, 4 gr. of Lithia citrate, and 5 gr. of Cerium oxalate, have also been recently placed on the market by the same makers.

The Lithia tabloids are effervescent, and may be taken crushed in water as an effervescent draught, or simply placed on the tongue. In either case they constitute a convenient and agreeable way of taking the drug.

Marriages.

ARMIT—POHL.—On the 15th inst., at Godesberg, by Pastor Dr. Winter, Henry William Armit, M.R.C.S., L.R.C.P.Eng., younger son of William Armit, of 47, Wetherby Mansions, S.W., to Josephine Maria Gertrude, elder daughter of the late Herrn Sanitätsrath Dr. Pohl, of Godesberg, Germany.

LEWIS JONES—VON PLATEN HALLERMUND.—August 18th, at Buenos Ayres, Henry Lewis Jones, M.D., L.R.C.P., of 9, Upper Wimpole Street, Cavendish Square, W., to Ctess. Marie Olivie, eldest daughter of the late Cte. Jean Henri Platen Von Hallermund, of Stockholm.

FRASER—MORRIS.—On August 24th, at Parish Church, Sarn, Montgomeryshire, by Rev. D. D. Pierce, M.A., assisted by Rev. R. Gibbings, D.D., Forbes Fraser, of Tarporley, Cheshire, to Mary, only daughter of Edward Morris, of Sarn.

WILKIN—WALLER.—Sept. 9th, at Cherrylimton Church, by the Rev. W. H. Cory, late Curate of Meldreth, Robert Hugh Wilkin, M.R.C.S., L.R.C.P., of Wickhambrook, Suffolk, to Fanny Louisa, eldest daughter of W. Mortlock Waller.

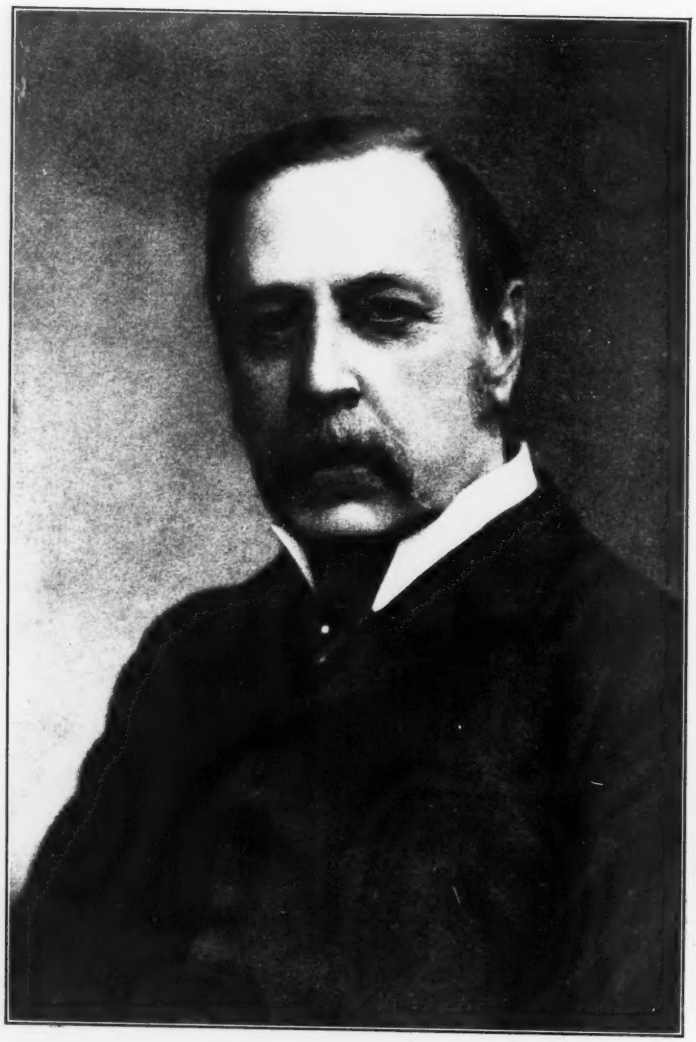
MANNERS-SMITH—BERTHON.—Sept. 10th, at St. Mary's, Bathwick, Bath, by the Rev. A. L. Stewart, Vicar of Aisholt, Alfred Egerton Manners-Smith, M.R.C.S., L.R.C.P., son of the late Deputy Surgeon-General Charles Manners-Smith, F.R.C.S., I.M.S., to Ellen Gwendda, daughter of the late Major-General J. F. Berthon, Bombay Staff Corps, and granddaughter of the late Very Rev. R. M. Bonnor, Dean of St. Asaph. Indian and Australian papers, please copy.

Death.

*BURN.—On May 14th, William Leopold, eldest son of W. Barnett Burn, M.D.Lond., aged 23.

* In the notice of Mr. Burn's death, which appeared in the July number, the name was unfortunately mis-spelt "Brown."

ACKNOWLEDGMENTS. — *Guy's Hospital Gazette, The Nursing Record, The Hospital, The Charity Record.*



W. Bruce Clarke, M.A., M.B., F.R.C.S.